ABSTRACT

In the current era, the Internet of Things is increasingly being applied in various fields. Current technological developments make various studies conducted to continue to develop the Internet of Things into various devices that can be implemented in various fields such as for the medical, agriculture, security, etc. This study discusses the system design of surveillance cameras on smart homes based on the Internet of Things. The purpose of this study is to analyze the feasibility level of the design of a surveillance camera system as a smart home device based on the Internet of Things. This design uses a Raspberry Pi which has been integrated with the internet and then connected to a webcam that functions as input for facial and surveillance data, then the Local Binary Pattern Histogram (LBPH) method is used to identify objects and then the image data that has been obtained from the surveillance results will be sent via email. The results of testing the surveillance camera system on an IoT-based smart home run according to a predetermined scenario. From the scenario of testing the surveillance camera system against the distance, the results are 100%, the next test scenario based on the intensity of light carried out in the morning with additional light from the lamp of 420 lumens, the results are 100% and the test carried out at night with a light intensity of 1260 Lumen results obtained by 60%, and the test scenario of the number of objects contained in a frame obtained an accuracy rate of 75%. The biggest delay is 3.3 s in the morning and the smallest delay is 0.99 s at night and the largest throughput value occurs at night of 590.41 bit/s which is obtained through the wireshark application.

Keywords: Email, Internet of Things (IoT), Lokal Binary Patten (LBPH), Raspberry pi, Surveillance Camera